

Trends and Patterns in Hospital Inpatient Utilization, 2000- 2002

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Nationally and in Rhode Island, hospital care is a major component of the health care system and the place of treatment for most severe health conditions. Data on inpatient care are useful in assessing trends and patterns in utilization as well as describing acute and chronic health conditions in the state. Data on overall inpatient utilization have been published in previous reports.¹⁻⁴ This study includes data from published 2000 and 2001 summary reports in addition to preliminary data from the 2002 summary report, to be published shortly.

Methods. The eleven acute-care general hospitals in Rhode Island have reported patient-level data on each inpatient discharged since October 1, 1989 per licensure regulations. As of October 1, 1998, two psychiatric specialty hospitals and one inpatient rehabilitation facility began reporting. The data items reported include patient demographics and clinical data coded to the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM).⁵ This analysis examined utilization during calendar years 2000-2002. Diagnoses and procedures presented here are grouped as for published national data.⁶ First-listed diagnosis and all-listed procedures were included.

Results. During the three-year period, 2000-2002, hospitals reported a total of 372,027 inpatient discharges comprising 2,038,841 days of care for an average length of stay of 5.5 days. The discharge rate per 1,000 population increased by 2.0 % across time. Increases of

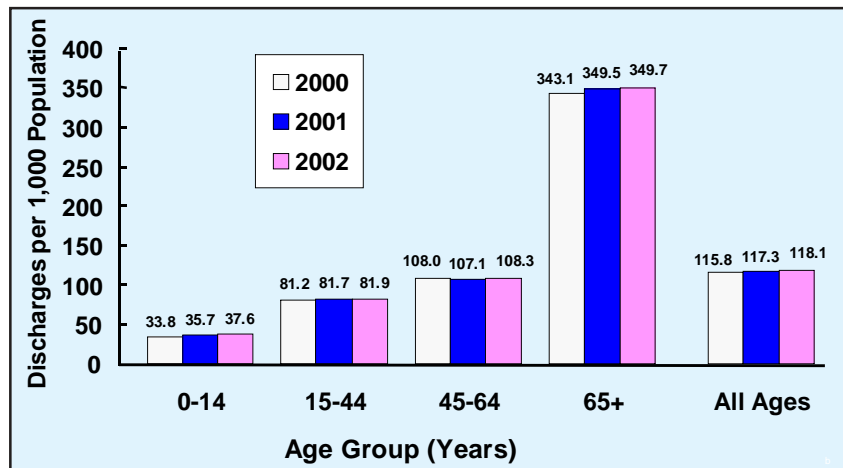


Figure 1. Hospital inpatient discharges per 1,000 population by age group and year, Rhode Island, 2000-2002.

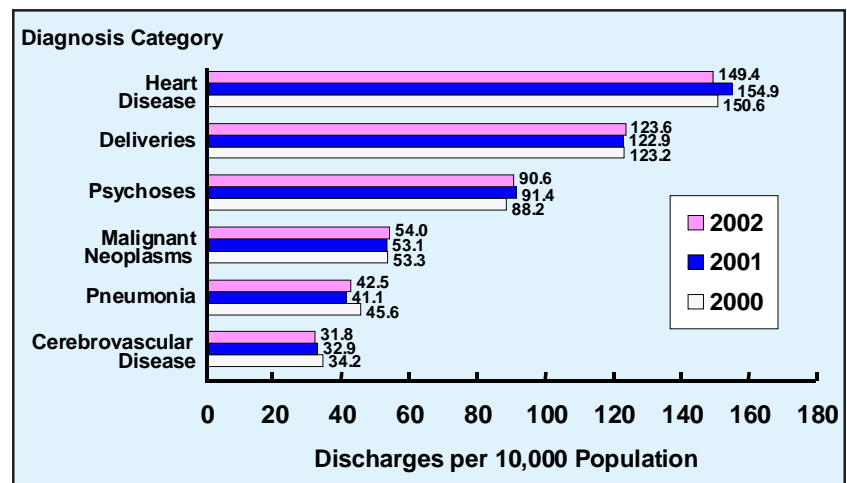


Figure 2. Hospital inpatient discharges per 10,000 population for most common diagnoses (first-listed), by diagnosis category and year, Rhode Island, 2000-2002.

Table 1. Most Common Diagnoses (First-Listed), by Gender and Diagnosis Category, Rhode Island, 2002

Rank of Diagnosis Category	Females		Males	
	Diagnosis Category	Number of Discharges	Diagnosis Category	Number of Discharges
First	Deliveries	13,225	Heart disease	8,393
Second	Heart disease	7,591	Psychoses	4,407
Third	Psychoses	5,284	Malignant neoplasms	2,677
Fourth	Malignant neoplasms	3,104	Pneumonia	2,195
Fifth	Pneumonia	2,347	Cerebrovascular disease	1,607

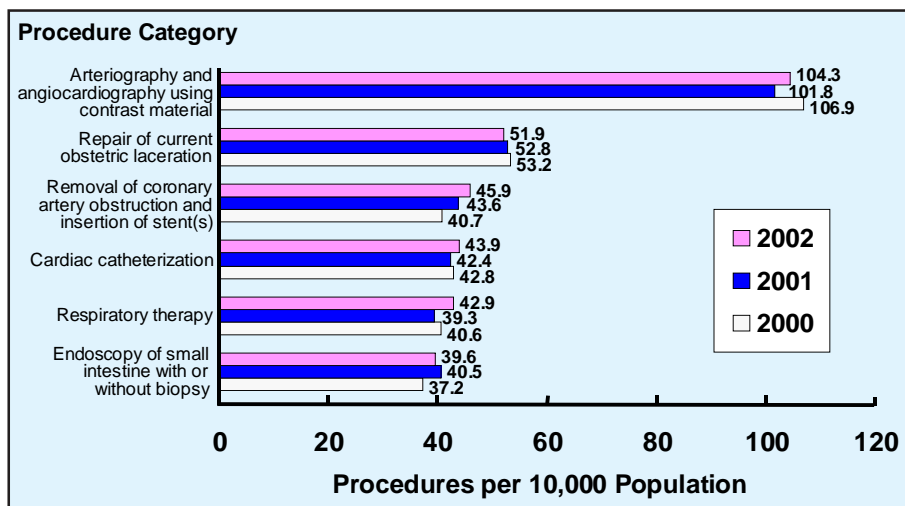


Figure 3. Hospital inpatient procedures (all-listed) per 10,000 population for most common procedures, by procedure category and year, Rhode Island, 2000-2002.

Table 2. Most Common Procedures (All-Listed), by Gender and Procedure Category, Rhode Island, 2002

Rank of Procedure Category	Females		Males	
	Procedure Category	Number of Discharges	Procedure Category	Number of Discharges
First	Repair of current obstetric laceration	5,552	Arteriography and angiocardiology using contrast material	6,772
Second	Arteriography and angiocardiology using contrast material	4,381	Removal of coronary artery obstruction and insertion of stent(s)	3,292
Third	Cesarean section	3,486	Cardiac catheterization	2,899
Fourth	Endoscopy of small intestine with or without biopsy	2,366	Respiratory therapy	2,394
Fifth	Diagnostic ultrasound	2,359	Diagnostic ultrasound	2,012

various magnitudes were seen across all ages. (Figure 1) The utilization rates for days of care used increased by 2.7% from 2000 (630.7 per 1,000 population) to 2001 (647.8), falling slightly in 2002 (646.1) for a net increase of 2.4% over the period.

Utilization rates differed substantially by gender during 2000-2002. Females accounted for the majority of the discharges (60%) and hospital days used (56%) in each year. Discharge rates for females were at least 1.3 times the discharge rates for males in each year. In 2002, the discharge rate for females (136.0 per 1,000 population) was 38% higher than the rate for males (98.7). Utilization rates for days of care used for females were approximately 1.2 times the rate for males. Females had a day utilization rate of 706.0 per 1,000 population in 2002, compared to 581.3 for males (21% higher).

The leading diagnosis categories among hospital discharges in Rhode Island remained consistent from 2000 to 2002 for all patients and for males and females separately. The discharge rate for heart disease was highest overall, ranging

from 149.4 per 10,000 population in 2002 to 154.9 in 2001, followed by deliveries of newborns (122.9 – 123.6 per 10,000 population) and psychoses (88.2 – 91.4). (Figure 2) Deliveries of newborns was the most common diagnosis category in 2002 for females (13,225 discharges) and heart disease the most common for males (8,393 discharges); heart disease was second for females (7,591 discharges). (Table 1) For both genders, psychoses, malignant neoplasms and pneumonia were also leading diagnosis categories.

The most common procedures reported for discharges for 2000-2002 varied slightly by year. For all years, the largest procedure category overall was arteriography and angiocardiology using contrast material, ranging from 101.8 per 10,000 population in 2001 to 106.9 in 2000). (Figure 3) These rates were at least 1.9 times the next leading category, repair of current obstetric laceration, which ranged from 51.9 per 10,000 population in 2002 to 53.2 in 2000. By gender, the most common procedures in 2002 for males were arteriography and angiocardiology using contrast material (6,772 discharges) and repair of current obstetric laceration (5,552 discharges) for females. (Table 2) Other leading procedures for males were removal of coronary obstruction and insertion of stent(s) (3,292 discharges in 2002), cardiac catheterization (2,899 discharges) and respiratory therapy (2,394 discharges). For females, the next most common procedures were arteriography and angiocardiology using contrast material (4,381 discharges in 2002) and cesarean section (3,486).

Discussion. The gross patterns of inpatient care utilization in Rhode Island changed very little during the three-year period 2000 to 2002. Overall utilization was up slightly, both for discharges and days of care. Females accounted for the majority of the discharges and days of care used. Heart disease, deliveries and psychoses were the leading first-listed diagnoses each year. Arteriography and angiocardiology using contrast material was by far the most commonly performed type of procedure. The slight increase seen in hospital inpatient care utilization overall merits continued surveillance. Additional investigations might assess whether increases are specific to a particular population, diagnosis or procedure. Particular attention should focus on hospitalizations for conditions that may have been prevented

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if the patient had received appropriate ambulatory care.

Data on the utilization of hospital inpatient care have been widely used for public health purposes as well as for monitoring the health care system. General patterns of care and specific health conditions, such as heart disease, mental illness, diabetes and injuries as well as quality of care have been examined. The addition of data reporting for outpatient care (observation services and emergency department visits) as of October 2004 will provide a more complete picture of hospital care in Rhode Island and provide additional data for examining these and other public health issues.

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